CAPITAL APPLE

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Meeting Information

The next meeting of the Wellington Apple Users Group will be on :

Thursday, 30 August, 1990

at

St Marys College

starting at

7pm.

The doors will be open at 6.30 pm to let people get together and the meeting itself will begin at 7pm. This months meeting is a combined special focusing on data exchange. Its.....

The Dance of the Digital Data 2

So come along and watch the data flow. As usual the doctors will be in to help with any technical problems and the sell / swap table will be open. If you're really quick youmay get to grab the club modem for a month of free test driving.

Apple IIs and the Outside World

Part 5 : Enhancing 'Appy

by Alastair Thomson

Programming 'Appy:

So how do we control our wayward young robot? You need to write and run a computer program.

As mentioned before, and demonstrated in the BASIC program in the previous article, the annunciators are switched on or off by PEEKing or POKEing certain memory locations. For instance, POKE 49241,0 will turn on annunciator (1) and POKE 49240,0 will turn annunciator (1) off again. Each annunciator will then turn on or off a relay. For a given motor, one relay turns it on or off, the other changes the direction of rotation.

I have used two different languages to control 'Appy - one was Applesoft BASIC, which everyone has, and the other was Apple LOGO. LOGO is much the better for ease of use. To turn on annunciator(0) in LOGO you say .DEPOSIT 49241,0 (don't forget the preceeding full-stop). But a lot of you will not have LOGO, so here are some thoughts on BASIC (I like BASIC!).

The following line switches both motors to forward, and then switches them on. Your robot may use different values if your annunciators are not connected up as mine are.

```
POKE 49242,0 : POKE 49244,0 : POKE 49S41,0 : POKE 49247,0
```

The line may look impressive but programming like this is extremely difficult - I can never remember what such a line is supposed to be doing. REM statements do help.

You could put such a line in as

```
1000    POKE 49242,0 : POKE 49244,0 : POKE 49S41,0 : POKE 49247,0 : RETURN
```

and say GOSUB 1000 each time you wanted to move forward, but the purpose of the GOSUB is still not obvious. And Applesoft BASIC does not let you say GOSUB "FORWARD".

But wait . . . it *is* possible to say something like CALL FORWARD in Applesoft.

CALL is like doing a GOSUB to a machine language program. If you have defined the address of the short machine language program as, say, BACKWARDS, then whenever you need to make the robot advance, you just say CALL BACKWARDS, and the robot obediently starts up and moves backwards.

"Ah", I hear you say. "I've never done machine language stuff before". Well, I've done it for you and it's very short, 75 numbers to be precise. The machine code get read into memory by a READ . . . DATA statement, and then the routines can be CALLed by your BASIC program. Here is some of the assembly language and corresponding machine code. This particular snippet switches both motors to forward then switches both motors on, so 'Appy moves forward.

```
FD      LDA     #$00    169 00          stores a zero in the accumulator
        STA     $C05A   140 90 192      pokes a zero into memory location 49242
        STA     $C05C   140 92 192      pokes a zero into memory location 49244
        STA     $C059   140 89 192      pokes a zero into memory location 49241
        STA     $C05F   140 95 192      pokes a zero into memory location 49247
        RTS     96                      returns to BASIC
```


The machine code needs to be in memory, so it gets put in at address 768 and above (a little area in memory not used by the computer normally, so we can store our snippet there). From BASIC this is done by including in your program the following lines:

```
5       GOSUB 1000
10      REM the rest of your program goes here

999     END: REM stops the programme from running into the GOSUB.
1000    FOR N = 0 TO 74 : READ Z : POKE 768 + N , Z : NEXT N
1010    FD = 768 : BK = 783 : LT = 798 : RT = 813 : OFF = 828 : BEEP = 837 : RETURN
1020    DATA 169,0,140,90,192,140,92,192,140,89,192,140,95,192,96
1030    DATA 169,0,140,91,192,140,93,192,140,89,192,140,95,192,96
1040    DATA 169,0,140,90,192,140,93,192,140,89,192,140,95,192,96
1050    DATA 169,0,140,91,192,140,92,192,140,89,192,140,95,192,96
1060    DATA 169,0,140,88,192,140,94,96
1070    DATA 169,0,140,64,192,96
```

Notice how line 1020 represents the assembly language snippet, FD, above. Line 1030 represents the routine to start up the robot and make her go backwards. This routine occurs after the FD routine, at 783 in memory, so BK is given the value 783. The next two routines allow the robot to turn left or turn right, LT and RT.

OFF is the routine to switch off both motors. If the robot gets herself in an inextricable situation, you can break out of the program with a CTRL-C, then enter CALL OFF, and the robot will cease her struggles. Naturally you also use it in your programs.

BEEP is a routine to beep the beeper (hence the subtle name) but only works if you install the beeper. See the enhanced 'Appy.

Note that FD, BK, RT, LT, OFF, and BEEP are Applesoft variables, so that only the first two letters matter. If you make up your own variable names then you can use more than two letters, like BEEP, but you must be careful not to include Applesoft keywords. For instance FORWARD would not work. Can you see why? Can you give two reasons why START and STOP would not work?

Note also that these routines work only if you have connected your annunciators up to the same motors as I did. If not, just swap the variable names (FD, RT, LT, and BK) around until each CALL does the appropriate action. If you sit 'Appy on a block on the table, or flip her over on to her back so her wheels are off the ground you can test her easily without 'Appy thinking she's a lemming.

The Enhanced 'Appy

It's all very well to have a computer-controlled vee-hickle, but 'Appy can do better. 'Appy should be able to detect when she hits something, and to take avoiding action. She can also find a dark corner in the room and refuse to come out, or wander around in the light and refuse to enter dark places. She could also beep at critical moments, or flash her LEDs. She might also follow a white line painted on the ground. She could draw a map of the floor, or be able to trace her steps backwards. Her direction of travel could also be controlled from the keyboard, with the controlling human pressing the arrow keys. I shall describe how to implement some of these ideas in the enhanced 'Appy.

The enhanced 'Appy has two switches mounted at the front. Across these is fastened a strip of plastic, to act as a bumper. If 'Appy hits something with her bumper, one or both of the switches

close. The computer is constantly monitoring the state of these switches (see Part 1 - Beat the Buzzer for a description of how the switches are detected) and when it detects one is closed (obviously 'Appy has hit a table leg or a wall or a biped) then a command is sent to both motors to reverse for a second or so. Then one motor is rotated forward so 'Appy turns perhaps 45 degrees, then both motors rotate forwards and 'Appy is 'appily on her way again, having avoided the obstacle.

	Parts List for Enhanced Robot	Price
2	lever-operated microswitches	$5 each
1	AWD (audible warning device, beeper, buzzer)	$5
2	CdS light sensitive resistors	$5 each
1	red LED	$1
1	NE 555 timer IC	$2
1	.22 microfarad capacitor	$1
1	180 kilohms resistor	
1	820 ohm resistor	
2	1 kilohm resistor	
	perforated stripboard, 16 tracks by 15 holes	
	plastic coated connecting wire	

Adding the Enhancements:

I will describe the enhancements seperately, so you can add each one as you see fit. All the enhancements should fit on the piece of stripboard, with room to spare. I shall call this stripboard the enhanced stripboard, to distinguish it from the motor controller circuit board.

Mark hole 1a on the enhanced stripboard in the same way as you did on the motor controller board.

To begin with, solder a red wire from track 16 (or track 21) of the motor controller board to hole 7o on the enhanced stripboard. This provides +5 Volts for the enhanced electronics. An earth (0 Volts) is provided by soldering a black wire from track13 (or track 19) of the motor controller board to hole 8o on the enhanced stripboard.

Collision Detection:

Two lever micro-switches need to be attached to 'Appy's front as shown.

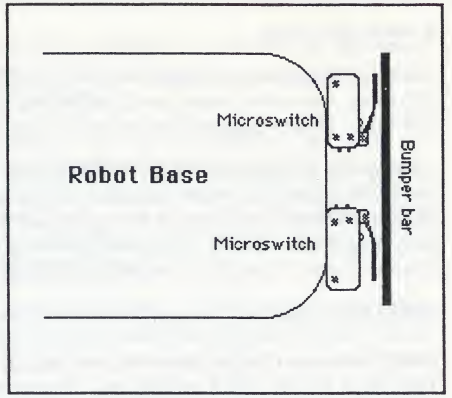
Fasten the switches to 'Appy's front by glueing, taping or screwing. Fasten a bumper bar (mine was a strip of plastic, 10 cm long by 2 cm wide) to the levers of the microswitches.

Solder a wire to a switch terminal and solder the other end of the wire to hole 1a of the enhanced stripboard. Solder a wire to the other terminal on the switch and the other end of this wire to hole 7a of the enhanced stripboard.

Do the same for the other switch, but solder to holes 2a and 7b of the enhanced stripboard.

On the enhanced stripboard, solder a 1 K resistor between hole 1g and hole 8g. Solder the other 1 K resistor between hole 2h and hole 8h.

Now go back to the ribbon connecting 'Appy to the computer. You will remember that some of the wires were tied back because they were not needed for the basic 'Appy. Unwrap two of these wires - the ones connected to pins 2 and 3 of the DIL plug. Solder these wires to holes 1n and 2n on the enhanced stripboard. And thats it.



'Appy can now sense her surroundings. To detect a switch event, you need to continually PEEK 49249 and 49250. If the value returned is greater than 127 then the switch is closed.

Fear of the Dark

The next enhancement to 'Appy is get her to respond to light and dark. We use the paddle inputs for this. You will recall that a paddle input (see Part 2 of this series) return a value of 0 to 255, depending on the value of an external resistance. Two resistances on 'Appy will play this role - but these are special resistances. They are light-dependant resistances (LDRs) so the resistance depends on the amount of light falling on each.

It works like this: there are two LDRs on 'Appy, one at the front, the other a little way behind. If both the associated paddle inputs are read continually, 'Appy will be able to tell which of the two LDRs has less light falling on it. You can program 'Appy to respond to this difference. One of my programs involves 'Appy on the floor, under a light, moving around randomly. But she will refuse to go under a chair or table, and if you try to shade her with a book, she runs out from underneath.

Two LDRs are necessary. Cadmium sulphide LDRs are easily obtained from an electronics shop. Solder one leg of an LDR into hole 4f and the other leg into hole 7f of the enhanced stripboard. The other LDR goes into holes 3j and 7j. Carefully bend both LDRs back on their legs, so that they lay flat on the stripboard, facing upwards.

Unwrap two more wires from the ribbon cable - the two that are soldered to pins 6 and 10 of the DIL plug. Solder the bare ends to holes 3a and 4a of the enhanced stripboard. A BASIC line like

```
10      X = PDL(0) : Y = PDL(1)
```

will return the values of the two LDRs and your program can tell 'Appy what to do next.

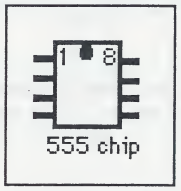
A Voice for 'Appy

The third enhancement allows 'Appy to beep at opportune moments. The circuit consists of a 555 timer chip which switches on and off the beeper. The beeper is a small piezo-electric buzzer. The timer chip is triggered by the strobe signal from the Input/Output socket.

Unwrap the last wire from the ribbon (the one soldered to pin 5 on the DIL plug) and solder the free end to hole 15a of the enhanced stripboard. Solder a wire (red) from hole 7i to hole 13c to provide +5 Volts. Another red wire is needed between hole 13b and hole 16j. Solder a black wire from hole 8b to hole 16b. Link hole 14i and hole 15i with a short wire. Solder the 180 K resistor between hole 15i and 16i. Solder the .22 microfarad capacitor between hole 14k and hole 8k.

Fasten the buzzer to 'Appy and solder the two leads from the buzzer to hole 14a and hole 16a.

Finally solder in the 555 chip. Pin 1 of the chip goes into hole 16d, pin 4 in 12d, pin 8 in hole 16g. If you want to be able to remove the chip easily, solder in an 8-pin IC socket (a cut-down 14 or 16 pin socket works fine), and then insert the 555 chip.



Again, to make life easier when something goes wrong and you need to dismantle 'Appy, you may wish to use proper connections (plugs and sockets) instead of soldering all the connections to the enhanced stripboard. It can be very frustrating unsoldering everything just to make a small change.

To program 'Appy to beep at a critical moment (say when a switch is activated) just CALL BEEP in your program (assuming you use the machine language routine in Part 4)

There are two more enhancements you can carry out on 'Appy. You can add an LED (light emitting diode) which lights up if the battery switch is on, and another LED to indicate when the computer is connected. They are not necessary, but useful indicators.

The first LED (to indicate if the battery juice is flowing) goes on the basic stripboard, not the enhanced. The LED is soldered between hole 33d and 34d, with the cathode at hole 34d. The cathode is indicated by the little flat on the body of the LED.

The track needs to be cut at 33i, and a 470 ohm resistor soldered between 33g and 33k. The LED should light up when the battery switch is switched to on. If it doesn't, it could mean that the battery wires are connected the other way around, in which case 'Appy will still operate, but the point of the LED will be lost.

The second LED goes on the enhanced srtipboard, and indicates if the computer is on and connected to 'Appy. The cathode leg goes into hole 8m and the other leg into hole 9m. A 470 ohm resistor needs to be soldered between hole 9o and 16o. You do not need to cut any tracks. If the LED does not light up when the computer is turned on, check to see if the ribbon cable is connected at both ends and check that the red and black wires connecting the two stripboards are correctly connected.

By the way, in my search for cheap bits for my robot, I dismantled two old photocopiers. Each yielded several microswitches and quite a few connectors, so get in touch and I'll send you some of the bits. Also, if you have difficulties in obtaining some of the other components, ring me (Wgtn 792-673) after 6.30 pm.

Well, that's it for this series of articles so far. I hope that you enjoyed it. However the expansion slots of the IIe and IIGS intrigue me and I may be back with a clock card and a peripheral card that allows you to control literally dozens of inputs and outputs.

I am currently working on some other I/O applications for the Apple II, such as a rev counter/timing device for tuning my motorcycles, and a device for totally controlling my washing machine (an old ringer type). I reckon that for a couple of hundred dollars for some water-level sensors and some electrically-operated taps I can save myself the expense of a new automatic washing machine. (If I come to meetings with holey clothes, wet clothes, smelly clothes, or even naked, you will be able to judge the success of the venture yourselves).

Some thanks are due to club members for help and encouragement. David Bettany and Allan Honey both provided good advice, and both David Empson and Brian Roberts spent hours explaining stuff to me, (most of it, at the time, over my head but some stuck). So thank you.

Thanks also to someone much further away - to Steve Ciarcia of BYTE magazine. His computer-related hardware articles provided much of the inspiration needed. I spent hours reading back copies of BYTE, and discovered that I was actually capable of understanding much of the information in the 1980 issues. Only ten years to catch up - look out Steve Whichever!

Many 'Appy hours of 'Appling to you all.

P.S. You may have noticed that I personified 'Appy as female. Done with the best of intentions, but it suddenly dawned on me that making a robot female could imply that this is a female's role in life. Nothing could be further from the truth.

'Appy has just had an invisible operation. It didn't feel a thing.

Useful Books:

Simple Interfacing Projects	Owen Bishop
BYTE magazine - various articles 1980-1990	
Practical Things to do with a Microcomputer	Tatchell & Cutler
Apple IIe Reference Manual	
Apple LOGO Reference Manual	
Inside the Apple IIc	Gary B Little
Apple IIc Reference Manual	

Oops

In the July article of Apple IIs and the Outside World a slip of the keyboard was made by the editor. In the parts list for the Unenhanced Robot (Page 5) the stripboard was priced at $44.00 and BC 107 Transistors $12.00. These items should read $4.00 and $1.00 respectively.

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Macintosh Murmurs

by Cyril QWERTY

YAWN, not enough sleep ... a hard month watching the various sources that contribute to these little articles. First up is something for all the Apple II users out there - those that have "Apple II Forever" as their mission statement, eh Allan.

Anything Mac can do, II can do better.

Date: 8 July 90 - Sender: Declan McCullagh Organization:Stanford University NeXT Lab

Cirtech is pleased to announce a major new Apple product!

DUET

Duet transforms the Apple IIGS into a powerful, low-cost, color Mac!

Duet is an innovative new product that provides a real bridge between the Apple Macintosh and Apple IIGS computers. For the first time, it is possible to run both Mac and GS software using the SAME computer!

Duet comprises a co-processor card and special 'link' software. The card (which fits into any standard slot in the IIGS) has a 16MHZ 68020 processor with one to eight Megabytes of RAM togther with a custom ROM. The system uses all standard Apple peripherals as 'Mac' ports or drives and is totally transparent to the computer user and all Mac applications.

Both the the 68020 AND the GS 65816 processors operate at the same time. The 65816 handles all input/output tasks while the 68020 is used to run Mac programs and the main operating system. This system results in amazinlgy fast performance (in a 'normal' Mac the processor has to handle almost all I/O itself, degrading overall performance). The Duet system actually outperforms the Mac IICX!

Options - 68882 co-processor chip (fits into socket on Duet card). RAM expansion (supplied with 1 Meg, expandable to 8Meg).

Duet is currently in the final stages of development and is scheduled for shipping by December 1990

— End of Press Release —

This interesting bit of information was found in a press release dated July 3rd. Personally, I'm amazed and more than a little bit skeptical, but if this product ever sees the light of day, it will be a more than welcome addition to MY IIgs.

Let's see: According to recent articles on comp.arch, a 68020 sells for about $70 or so. One MB of RAM in SIMM form is $55. You can buy Mac ROMs from CDA Computers in New Jersey for under $100... Hmm... It's almost plausible.

-Declan

——— Declan McCullagh - Registered NeXT Developer

So what do we think of that then? Hold onto those][+'s and wait for the upgrade card for the NeXT cube.

Breaking Up Is Hard To Do

Found on WAUG Shorts - the following downloaded from BIX

Late June 1990 - Apple Changes Mind on Claris; Software Company Won't Go Free

Apple Computer has reversed its 1987 decision to spin software development off into a separate company and announced Friday that Claris Corp. will remain a fully owned subsidiary of Apple. Claris will now focus its development and marketing efforts on its flagship applications, such as ClarisCAD; extensions to Apple's system software; and products that link the Macintosh with other computing environments.

"Apple's goal is to significantly increase our unit growth," said Apple CEO John Sculley in a prepared statement. "Developers should view our decision on Claris as a key indicator that Apple is

very serious about this goal, and in differentiating our products through innovative technology in the years ahead."

Some software developers were concerned about having to compete with Apple's own software development efforts. Apple said those concerns were part of the reason it spun off Claris 3 years ago. But Apple says now those developers shouldn't worry.

"Apple has shown in the past it can be even-handed while having an applications software subsidiary, so this won't change in the future," Apple spokesperson Chris Escher told Microbytes Daily. "I think there will be skepticism on the part of the development community. But we think this is good news for developers in the long run, and it's our challenge to demonstrate that we will be even-handed."

Why will this be good for developers? "We're elevating the role and paying more attention to system soft extensions," Escher said. "There will be a greater emphasis on software as a point of differentiation in coming years in the industry. We want to maximize our software differentiation and get optimized applications out there to make the development environment richer for the developer."

Several questions remain, most notably how Claris will interact with the Developer Services organization, which has been responsible for promulgating and seeding development tools from Apple.

— Larry Loeb

And then this appreared...

Comments - from Larry Loeb- Mon Jul 1990 Extra to Claris Story

Even better is the REAL story; which I didn't write since I just confirmed it today.

Claris was planning ports to windows and OS/2. Apple blew a cork and said 'we'll keep you now'.

That's the WHY of it.

And then someone in Wellington adds - This from the same guy who wrote the BIX story. Maybe Cyril should hear of this. Anyone know how to contact him?

I'm watching .... Neat story, especially the punch line.

"It's a Kinda Magic"

Three Apple Computer veterans will head up a new company to develop "personal intelligent communicator" products, Apple announced today. Bill Atkinson, author of MacPaint, Andy Hertzfeld, author of most core Macintosh software, and Marc Porat, ex-manager of business development at the Advanced Technologies Group, will head up the new company, called General Magic. Apple is funding the business as a minority shareholder and has the first non-exclusive license to manufacture and market products developed by General Magic. Apple CEO John Sculley will be on the company's board.

Apple representatives refused to go into details about the new company. They issued a statement saying the "concern will address market segments outside of Apple's mainstream business." This implies that General Magic will not be in the business of desktop computers but leaves open a wide range of electronic products it could be involved in. It's safe to assume that the products will be computer-related, considering the backgrounds of those involved.

An Apple representative was adamant that this new effort is in no way related to top-level executive changes that have been going on recently. "Totally unrelated. Everyone is entering into this with a good feeling about its future," he said.

In any case, the "personal intelligent communicator" products the company is developing are not expected to be immediately forthcoming. One Apple insider put it this way: "Think of what the Macintosh was envisioned as in 1981. That had changed drastically by 1982, and it didn't ship until 1984. They have a vision; now they need time to develop it."

I just can't wait for any of the products that these guys can turn out.

Are You Ready?

As readers will know, I've been keeping a fairly close eye on the low cost Mac rumours. Here is the latest (29 July 90) from a source on a US Bulletin Board. Its the clearest description I've heard to date.

TITLE: Some sketchy details of a new Mac

I had a nice long talk with someone who has viewed one of the new 'low cost' Macs first-hand. Though he did NOT sign a non-disclosure agreement, it's best that I not publicly say where he saw it.

Here is what he told me: The machine was called the Macintosh LC (low cost?). It was about the size of a IIgs System Saver—about the height of the Apple Drive 3.5. It used a colour monitor (16 colours but upgradable) and had an Apple //e emulation card installed. He was an Apple II user, not very familiar with Macs, but he's pretty sure it uses a 16Mhz 68020. All the usual ports in back.

It seems very likely that this machine will be released in its current form, for reasons I cannot publicly state.

Oh, there is also good reason to believe that this is one of three new Macintoshes to be released around October. Pricing: 'rock-bottom'

Suffice it to say i have extremely high confidence in this 'rumor.'

PS: One more thing - since the computer isn't tall enough for any type of 'conventional' card, then one of two things is true:

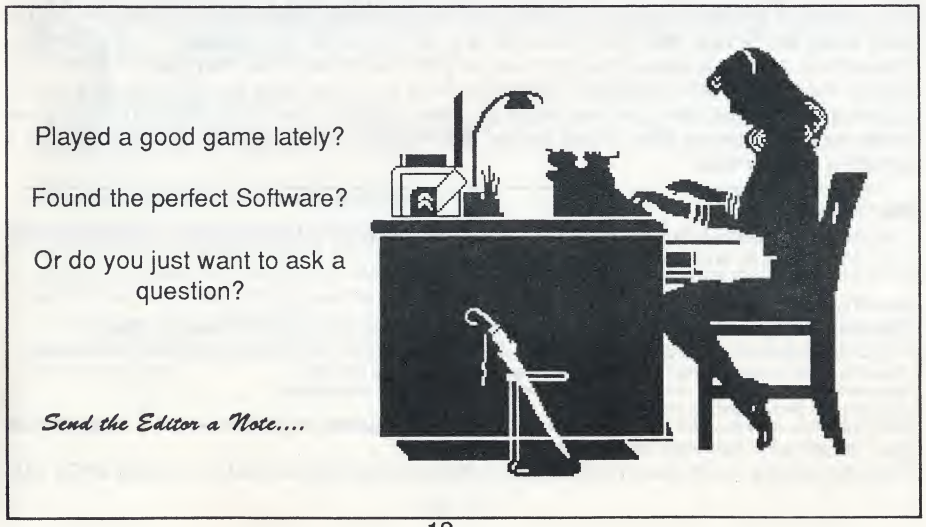
1) The Apple II card is VERY short, or 2) The card slot faces sideways, so cards are parallel to the main logic board. Brings a new meaning to 'parallel processing.'

A reply says : Are you sure the emulation was hardware and not software? I've heard rumors that the emulation was in software with a small amount of hardware assist (such as an Apple //e compatible video display circuit). Sorta like the][in a Mac product that was out several years ago.

And the response from the original writer : Unfortunately, this fellow was technically oriented enough to ask the right questions. He said it had an Apple II emulation card. He did specify that it did / /e emulation, but not IIgs. He could have been wrong about the card, though. For //e emulation, software seems adequate. Heck, if someone could make][-in-a-Mac without Apples help, why couldn't Apple do it?

So then, what do you think? I hope its not a 68020 processor, what's wrong with a 16 mHz 68000 - would keep cost down and its good enough for the portable in CMOS form. What does this mean about Sytem 7.0? Seems the Mac LC won't be able to handle virtual memory. How much RAM will be standard, how many SIMM slots? I guess there are some things we just have to wait for.

Does anmyone know yet if CED have made hotel bookings around the country for October? What do we all want for Christmas then?



Macintosh Public Domain

$10.00 each, or $5.00 per entry in the catalogue if you bring your own disk.

Please remember to format all disks you bring to have filled up at the meetings. This will save us a great deal of time. Thanks.

New Release of Disinfectant

The following is from John Norstad, the author of Disinfectant:

Disinfectant 2.0 is a major new release of our free Macintosh anti-viral utility.

> The main goal of version 2.0 is to provide a complete and free solution to the Macintosh virus problem in a single package (in fact, in a single file). Version 2.0 addresses all four aspects of the virus problem: detection, repair, protection, and education.
>
> Version 2.0 includes a new virus protection startup document (INIT). The INIT is designed for use by novices and others who find existing protection INITs to be too complicated and obtrusive.
>
> Version 2.0 has a much-improved online manual, with pictures, printing, a context-sensitive help system, and many new sections of information.
>
> Version 2.0 is a non-modal application with standard windows and menus. It supports desk accessories, printing, MultiFinder application switching, and scanning in the background.
>
> There is a new Preferences window which can be used to specify miscellaneous options and parameters.
>
> Other new features include more scan and disinfect options, new counters in the main window, and a much-improved scanning station feature.
>
> Version 2.0 also recognizes the Frankie virus. Frankie only affects some kinds of Macintosh emulators running on Atari computers.

Due to the importance of anti virus programs, and their tendancy to have minor updates every few months, it has been decided to update the existing **Mac•Virus** disks as necessary, rather than bring out a new title every time we get an update of the software. Unfortunately, Disinfectant 2.0 is considerably larger than the previous versions, so I have had to remove the System Folder from Mac•Virus•2 in order to make it fit. If you want an anti-virus disk that is a startup diak (I do), then you can either get **Mac•Virus•2** (which has other virus tools) and create your own startup disk, or you can get **Mac•Virus•3** which only has Disinfectant, but is already a startup disk.

Mac•Virus•2
... no longer contains a System Folder, but has Disinfectant 2.0, GateKeeper 1.1, gatekeeper aid 1.01, Vaccine 1.0, and Virus Encyclopedia.

Mac•Virus•3
This disk contains Disinfectant 2.0 and a System Folder, to make it a startup disk.

- The whole Public Domain collection is available at meetings for you to fill 'em up right away.
- Mail order copying is preferred. Otherwise, please include $2 to cover postage and packaging.
- Bring you own disks or purchase some at the meeting.
- Many of the disks in this library are labelled as 400K disks, this is to ensure compatibility with those members that do not have 800K disk drives. New disks will be 800K, unless otherwise specified.

Order by sending a preformatted disk to the address on the back or call Bruce Hoult at772-116.

Apple II Public Domain

$6.00 per disk, or $3.00 if you provide your own disk.

As promised in last month's Capital Apple, we have a lot of new software this month. It's nostalgia time, and we're back into good old DOS 3.3 again...

Thanks to WAUG member John McLellan for providing this software (from the Big Red Apple Club).

Disk: WAUG #38 **O/S: DOS 3.3**

A collection of games created with THE ARCADE MACHINE. All of these games are a variation on the "shoot-em-up" theme.

The games on this side of the disk are "Beach Party", "Fireground" and "Poacher Wars".

Disk: WAUG #38 (reverse) **O/S: DOS 3.3**

More Arcade Machine games: "Tomb of Doom", "Revengeful Rabbit" and "Bee Crunch".

Disk: WAUG #39 **O/S: DOS 3.3**

This disk contains several programs with various uses:

- A program that converts between astronomical Right Ascension/Declination and Altitude/Azimuth coordinates.

- A program that displays all the major constellations visible from North America, with relative brightness, giving R.A./D. values. Some of these constellations are also visible from New Zealand (turn the picture up the other way).

- A recipe storage/retrieval program.
- A program that assists in memorizing poems.
- An introduction to Organic Chemistry.
- A tutorial on Applesoft arrays.
- A metric/imperial conversion program.
- A reaction/braking distance calculating program (in miles/feet).
- A digital clock (with optional alarm).
- A program that calculates percentages for exam scores, with analysis of mean score, standard deviations, and calculating numbers and proportions of grades (A+, A, B+, etc.)
- A program that calculates students' scores for an exam with up to three parts. Each part can contribute different proportions to the total score. Scores can be written to disk for processing by the analyser.

Disk: WAUG #39 (reverse) **O/S: DOS 3.3**

This side of the disk contains three astronomy-related programs:

- a Hangman game (using astronomical words).
- a Birth-date analyser.
- a Multiple-choice astronomical quiz.

Disk: WAUG #40 **O/S: DOS 3.3**

Vocabulary Extension (disk 1) - a multiple-choice quiz which tests you on synonyms, analogies etc.

Disk: WAUG #40 (reverse) **O/S: DOS 3.3**

Vocabulary Extension (disk 2) - more quiz questions. Also included on this disk is a bar/pie chart drawing program and a simple database program.

Disk: WAUG #41 **O/S: DOS 3.3**

Several educational/games programs, including a Typing Tutor, Hangman game, geography challenge game, several mathematical games and a U.S. States and Capitals quiz.

Disk: WAUG #41 (reverse) **O/S: DOS 3.3**

Three more Pinball Construction Set games: "Arcade Pinball" (which has a bug in it), "Minute Magic" and "Meta-Pin".

Our star attraction this month is a set of five double-sided disks containing graphics, fonts and utilities for use with The Print Shop, by Broderbund. There are a total of 21 fonts and several hundred graphics included.

These disks are all DOS 3.3-based, so they will work with the original Apple II Print Shop program. The files can also be converted to ProDOS (using the Apple II System Utilities, CONVERT or Copy II Plus) and used with the new Apple II Print Shop or the Apple IIgs version of Print Shop.

You must have Print Shop for the Apple II or IIgs to make use of these disks.

As a special offer, we are providing these disks at a reduced price.

	We supply the disks	You supply the disks
Individual Disks	$4.00 per disk	$2.00 per disk
Set of five	$15.00	$5.00

To order the five disk set, specify "WAUG.PS.SET". To order individual disks, use the names listed below.

Disk: WAUG.PS #1 **O/S: DOS 3.3**

This disk includes 'Print Shop Graphic Maker', a program that can create Print Shop graphics from standard High Resolution pictures (on screen or from a file on disk).

It also contains 50 Print Shop graphics created by Print Shop Graphic Maker, and a program that demonstrates how you can use Print Shop graphics in your own Applesoft programs.

Disk: WAUG.PS #1 (reverse) **O/S: DOS 3.3**

This side of the disk contains a drawing program 'Edu-Paint', a high-resolution graphics drawing program that is operated by joystick (preferably of the non-centering variety). This program can draw lines, rectangles, circles, fill in areas of the picture, etc.

If you prefer keyboard control, see disk WAUG #21 (Hi-Res Draw).

Disk: WAUG.PS #2 (both sides) O/S: DOS 3.3

A variety of Print Shop Graphics, including a slide show viewing program which can be used to view all of the Print Shop graphics on any DOS 3.3 disk.

There are further graphics on the reverse of this disk.

Disk: WAUG.PS #3 **O/S: DOS 3.3**

Several Print Shop Graphics containing international symbols for use on signs (such as in airports). The slide show program is also included.

Disk: WAUG.PS #3 (reverse) **O/S: DOS 3.3**

A full set of Print Shop Graphics for "Gothic" style lettering, in two sizes.

A Gothic Font is also included.

Disk: WAUG.PS #4 **O/S: DOS 3.3**

Lots of Print Shop Graphics intended for children (soft toys, animals, etc.), with the slide show program.

Apple II Public Domain

Disk: WAUG.PS #4 (reverse) O/S: DOS 3.3

Lots of Print Shop Graphics depicting people, dogs, cats, etc.

Disk: WAUG.PS #5 O/S: DOS 3.3

A further 75 Print Shop graphics (the slide show program is NOT included on this disk).

Disk: WAUG.PS #5 (reverse) O/S: DOS 3.3

A collection of fonts for use with Print Shop (20 of them).

Please note the following changes to the disks that were listed in the June 1990 issue of Capital Apple:

Disk: /WAUG.36

This disk now contains version 3.0.3 of SHRINKIT. The new version fixes a few bugs over version 3.0.2.

Disk: /WAUG.37

The WORD-SEARCH program had some errors in it which have been fixed (an UNDEFINED STATEMENT).

Apple IIgs Public Domain

$10.00 per disk, or $5.00 if you provide your own disk.

This month we have two new demonstration disks:

Disk: GS.Demo.8 (8/16 Paint)

8/16 Paint is yet another IIgs drawing program. The full version of 8/16 Paint has programs that support all hi-res graphics modes of the Apple II (standard, double and super hi-res in both 320 and 640 mode).
This demo program only works in super hi-res mode.

Disk: GS.Demo.9 (Nucleus)

Those of you who weren't able to attend last years christmas function will have missed out on this gem. Nucleus is one of the most amazing demonstrations of the IIgs's graphics and sound capabilities that I have ever seen. The program plays tunes in the background while doing several types of on-screen animation, including rotating three dimensional objects under user control.
This version of Nucleus will work on the original IIgs as well as the 1 MB "ROM 03" model (the original version wouldn't work on newer IIgs's).

Modems by Mail?

Recently one of our members asked about where and how he might obtain a reasonably priced modem to replace his slow 300 baud model. The following contributions were left in reply on our Bulletin Board (WAUG Shorts).

Now may be a good time to summarise the purchase of a modem from the USA as recent messages indicate quite a bit of interest in the subject.

The least you'll want is a 2400 baud modem, CCITT, and Hayes compatible. A $US 99 one with these specifications will be reasonably cheap to import, however, as an example of a mid-range price modem costing $US 230, look for the inclusion of a commercial communication program in the package. Does it include a computer/modem cable? (often not) reckon on purchase of cable in NZ for about $NZ60. Reckon to add between $US35 to $US50 for p.p./insurance cost to the modem price.

Taking the modem price of $US230 plus $US35 p.p. the landing cost in NZ at todays rate will amount to $NZ449. Add GST $NZ505 total. The NZ shipping agent may or may not charge about $NZ25 'storage charge'.

Now that you have the modem you will need to replace the phone cable which came with the modem, or replace one US phone connector on the cable with a NZ phone connector.

You have two choices with the power pack (assuming a separate power pack came with the modem). One of the choices is NOT to cut off the US mains plug and replace it with a NZ 3 pin plug. The results are likely to be spectacular, costly and possibly fatal.

You can use a stepdown voltage transformer to convert the NZ240v to the US110/115v. Not particularly recommended unless the power unit is inside the modem.

The second solution is to purchase a NZ 240v power pack with an output appropriate for the modem needs. Determine this from the modem specifications, hopefully, in the modem handbook.

Note also the type of output connector on the US power pack as it follows that the NZ power pack will require the same type of connector to couple it with the modem. The polarity will also need to be checked.

The electrical requirements are fairly simple but must be right, so if you are not sure of what you are doing just consult someone who does know.

One gray area that I don't know about is whether customs are charging a tax, other than GST, on modems as they said they were going to do some six months or so ago. I'm not about to ring them to find out in case it reminds someone there that they do intend to do so. Has anyone imported a modem recently?

If I have forgotten something relevant to the purchase of a modem from the USA please leave a message for the benefit of those who may be thinking of importing one.

In extending the modem purchase information- when purchasing hardware from the USA, choose a purchase which has an international power supply where possible. Sometimes that is one difference between one manufacturer's item from another and is very important to NZ buyers.

And another contributor adds ...

That's a pretty reasonable summary. People should note that although there are several things that you have to do, most of them aren't costly.

The only thing that is going to cost real money is the mains transformer. A small 240 to 110 transformer seems to cost about$60 (note: make SURE it is a transformer, and not one of those things you see in bathrooms for powering shavers – they are just choppers and will destroy electronic equipment), or a power pack will cost about $40.

Changing the connectors is cheap. It cost me $1 for a power connector for the power pack I bought (it had the wrong connector, but was the right voltage, so I considered it "near

Continued on Page 26

Don't Hand Me That Old Line

or

Digital Dictionary

or

Modem Mirth

So you've just bought a modem, or you're thinking of buying one. A whole new world awaits so best to come to grips with all those buzz words now. Maybe the following will help .... or maybe it won't.

Term	Definition
ASCII	Ancient God of telecomputing - rumoured to give vast amounts of data to believers, hence the phrase "ASCII and ye shall receive."
Async	A place to wash your hands.
BBS	Tall tales told by insects that produce honey.
Blast	What you get from snorting protocols.
Block Parity	One hell of a good time.
Carrier Detect	Raison d'etre for premarital blood tests.
Datapac	A size 14 girl in a size 8 bikini.
Ethernet	A device for catching the Eathter bunny.
File Transfer	Procedure followed by staff who are tired of their present jobs.
Hayes Compatible	Prone to riding with a grizzled old cowhand who sings off key - Gene Autry is the industry standard.
ISDN	A generic acronym given to projects with no clear objectives.
MODEM	What landscapers do to lawns.
Serial Interface	A spoon.
Token Ring	A virtual engagement gift.
XMODEM	A device on the losing end of an encounter with lightning.

SPECIAL OFFERS

3.5" Floppy Disks

Double Sided, Double Density top quality SKC disks are now only $35 a box.

Ribbon Reinking

The club is able to re-ink a number of printer ribbons. Imagewriter, Apple DMP, CItoh 8510 ribbons can be re-inked. These cost $3. Other ribbons can be re-inked also - Epson FX/MX/RX 70/80, Seikosha SP 1000, Panasonic 1080/1090. Still other ribbons have been successfully re-inked, but it depends on the ribbon. Since re-inking these means different drivers for the Macinker, the fee for these is $5. Bring your ribbons to a meeting. We operate an exchange system on Imagewriter ribbons. On others you get your own back at the next meeting.

More on Ribbons

A few ribbons presented to me recently have not been able to be re-inked because they were worn out (small tears and holes in the fabric). For $12 we can supply a new black refill and for $15 we can supply new single-colour refills (red, green, yellow, or blue). In both these cases you need to supply me with the old cartridge, and I will return it to you at the next meeting. We also sell new black Imagewriter ribbons at $15.

Modem for Loan

Our special "free" modem offer is going like hotcakes. There's now about a six month waiting list, so be quick or you'll never get a chance to try out BBSing without having to buy your own modem.

Back Issues of Capital Apple

There are still some issues of Capital Apple. A complete list of the available back issus was published in the March magazine, but they're selling fast! For more information, contact the Editor either at the Club address on the back of this magazine or by leaving a note on Shorts.

Cables

The user group has a variety of computer cables for sale: printer cables, SCSI interface cables, Mac-to-Mac cables, etc. For more information, contact Mike Eastman, either at a meeting, or phone 787–041.

DISK
PRICES
ARE
GOING
DOWN

NOW ONLY
$35
Per Box of 10 High
Quality SKC DSDD 3.5"

Call WAUG Today

Letters 'n' Stuff

The following exchange of letters recently took place between Peter Allport and David Wilson on that ever popular topic - The Deskjet. We thought the subject might be of wider interest so...

Dear David,

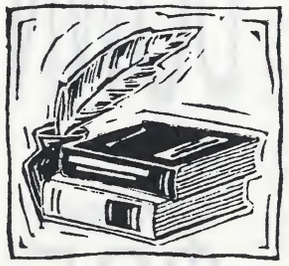
I refer to the item in Macintosh Murmurs in the July Mag regarding refilled DeskWriter in cartridges.

I operate a DeskWriter in conjunction with my Mac SE20 and would be very interested in the possibility of obtaining refilled cartridges at around $NZ20.

I was also interested to hear of the availability of colour cartridges. I have, for some time, been trying to get these locally without success and would be very keen to get a selection of colour cartridges (blue, red, green) to try.

Please let me know if you decide to proceed with the refill cartridges deal - I would be a starter - and perhaps it might be possible to get some colour cartridges at the same time.

Peter Allport



All those old Computer Books and Magazines that are lying around your place could go a long way in helping establish a club library. If you cant use them maybe someone else can. See what you can find to bring to the next meeting, you may be surprised.

Dear Peter,

I too own a DeskWriter. In fact, the last letter that I sent to you was printed on my DeskWriter.

The committee has been aware that DeskWriter refill cartridges are available. These have now become available in New Zealand. I have undertaken to "trial" a refill pack and report back to the next committee meeting in September on its success or failure.

This morning, I refilled one of my empty cartridges. So this letter has been printed with refill ink. My first test showed a distinct difference in ink quality after it hit the page (fury letters are not nice to read), but I had only just refilled the cartridge and the ink may need time to settle.

Should the "trail" prove to be satisfactory, the User Group may purchase some refills in bulk so that it can sell them at a discounted price to members.

The refill pack that I have has two refill squeeze bottles in it, one bottle fills one cartridge. There is a thin nozzle coming out of the squeeze bottle that goes through the hole in the top of the cartridge right into it, into the sponge ink reservoir.

The pack of two refills cost $43.78 including GST.

On the subject of colour cartridges or refills, I asked about them when I purchased my DeskWriter, but the response was no. However on the front of the refill pack, there is a black spot with "Black" written in it, indicating that the box contains black refills.

Stay tuned for more information.....

David Wilson

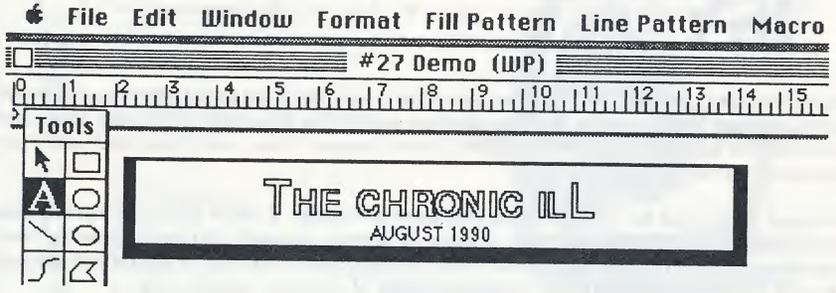
Desktop Publishing in Works

Works Help #27

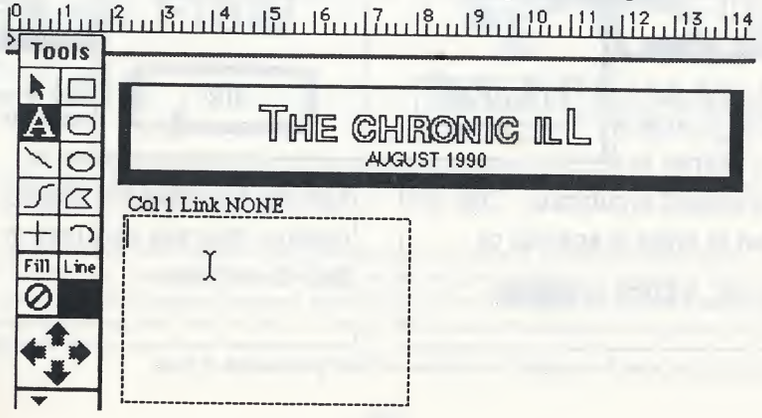
by Dennis V. Lally

There are many definitions as to what desktop publishing is. To most it means being able to produce documents like newsletters and magazines with direct control over the layout, the appearance of type (font, size, style), the placement of illustrations and diagrams and the importation of other documents. It usually excludes processes which harken back to the bad old days of typesetting programs where you typed in cryptic commands to control the layout, but never saw the final product until it came out of the printer.

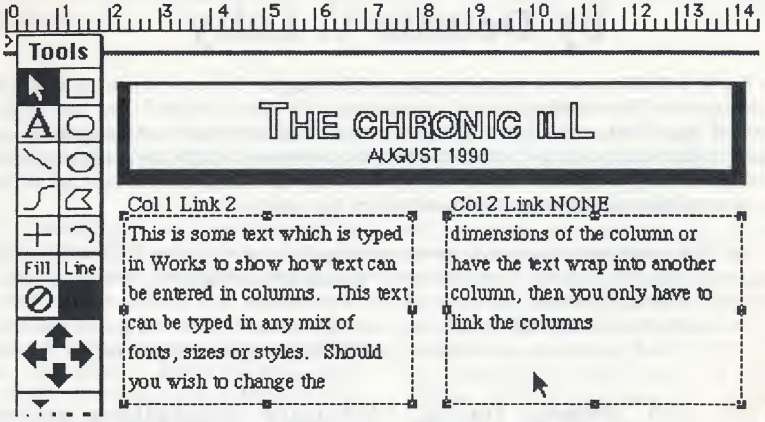
It is true that new word processors now have many features which were exclusive to desktop publishing programs, but it is also true that these word processors tend to be high in both price and complexity. Works, however, has a simple word processor, but by virtue of its integrated drawing, spreadsheet and database functions, it too can create publications that can rival and sometimes better word processors and desktop publishing programs which sell for 3 to 4 times its price.



Illustrated above is the banner for a fictitious newsletter. The drawing tools in Works are used to create both the boxes and the text. Body text for the newsletter is also set out using Draw mode. Holding down the Option key after selecting the text tool allows a text box to be drawn which allows you to visually set the limits on text block length and margins.

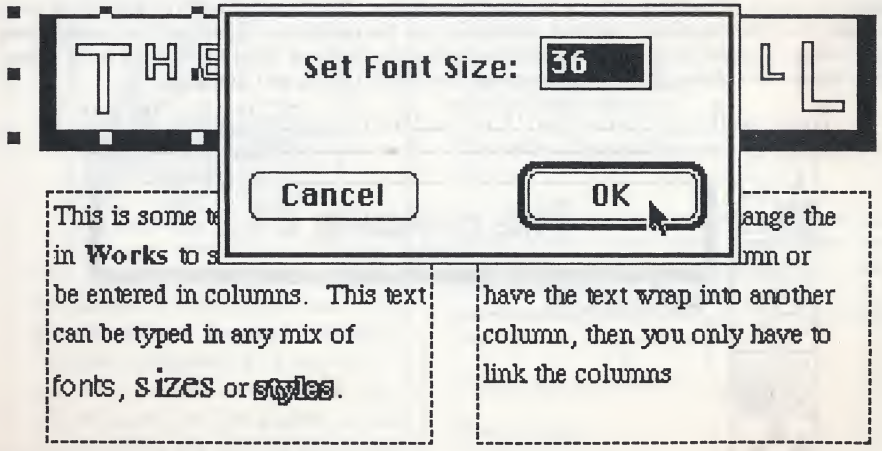


Linking text boxes are created by first drawing the text boxes using the Option key and the text tool and the order of linking is indicated by using the selection (arrow) tool while holding down the Option key and clicking in each text box in the order in which you want the text to flow.

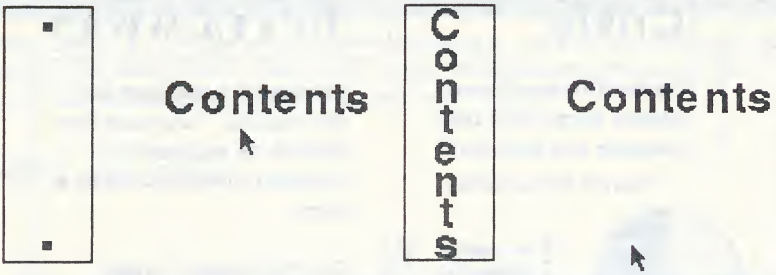

Tools
Fill
Line
THE CHRONIC ILL
AUGUST 1990
Col 1 Link 2
This is some text which is typed in Works to show how text can be entered in columns. This text can be typed in any mix of fonts, sizes or styles. Should you wish to change the
Col 2 Link NONE
dimensions of the column or have the text wrap into another column, then you only have to link the columns

Note that the Col# Link# and box borders show which order the links have been made and where the boxes are, but like the guide lines in desktop publishing programs these bits don't print. These text boxes will link even if they are on different pages. There is no practical limit on how many text boxes can be linked.

Works has a useful tool for manipulating text more precisely. It allow text to be spread along a defined line or arc. The process (refer to page 32 in your manual) effectively breaks a line of text into component parts which can be stretched, compressed or curved. It also allows separate letters to be given special treatment as shown below.

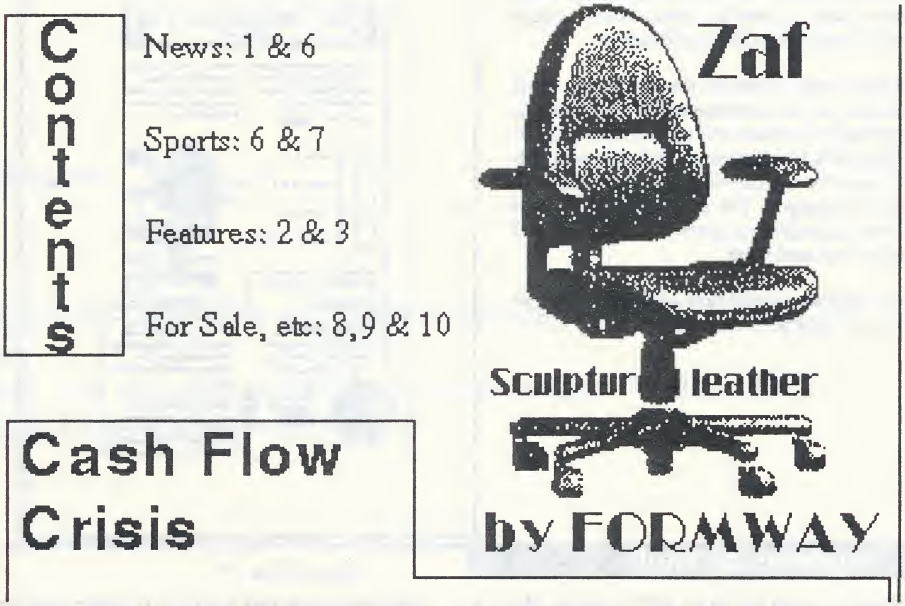


The technique can also be applied to achieve vertical placement of text.



As shown on the left, the horizontal text is copied to the clipboard, a vertical line with line shade set to nil is drawn in the box (you can see its selection handles) and then the Spread Text command is chosen from the Draw mode Format menu to achieve the result shown on the right.

Clip art, whether bought, scanned or drawn can be pasted in to provide illustrations at any location in the publication.



Text and illustrations can be located anywhere. This allows the freedom of style to create a layout first and add text and pictures later.

Text can also be created in Works own word processor or any other word processor. However, the technique for importing into the text boxes of the publication requires the use of the clipboard, thus any original fonts or styles will be lost. Nevertheless, the text boxes can be preformatted to any font, size or style. As well, fonts, sizes and styles can be mixed within a text block.

PostScript

The Wellington Apple Users' Group is a non-profit organisation formed in April 1984 with the following objectives:

- To exchange and disseminate information among the members concerning the computer arts and sciences.
- To publish books, newsletters, magazines and periodicals for the benefit and education of the members and the general public.
- To conduct and sponsor seminars, lectures and courses relating to the computer arts and sciences.
- To provide technical assistance to members of the group.
- To seek privileges and discounts for members.

SUBSCRIPTIONS

Students $22 : Individuals $32 : Families $40 : Corporate $200

INTENDING MEMBERS

Anyone wishing to join W.A.U.G. should contact the membership secretary.

BULLETIN BOARD

The User Group's electronic bulletin board is available 24 hours a day, 7 days a week. The number is (04) 278-817. To access it, you need a 300, 1200, 1200/75 or 2400 BAUD modem.

COMMITTEE MEMBERS		**Home Phone**	**Work Phone**
Patron	Steve Wozniak	n/a	n/a
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Group Products	Mike Eastman	787-041	787-041
Mac PD Software	Bruce Hoult	772-116	n/a
// PD Software	David Empson	849-158	856-611
Membership	Grant Collison	853-687	853-687
	Cameron Kay	828-453	n/a

Committee members prefer to be contacted before 9:00 PM
Allan Honey and Bruce Hoult are shift workers. Please do not phone them before 10:00 AM

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Contributions are made to the magazine gratis, but fame and popularity are bound to come to those writing, along with the occasional lawsuit. Copy is preferred as a diskette file (any Apple format). Hard copy is also acceptable (although somewhat painfull for the Editor).

All correspondence should be addressed to: **The Wellington Apple Users Group, P. O. Box 6642, Wellington.**